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**Fifth semester B.E. Degree Examination, Model Question Paper - 1**  
**Non Traditional Machining**

Time: 3 hrs.

Max. Marks: 80

*Note: Answer any FIVE full questions, choosing one full question from each module.*

**Module-1**

1. (a) Define and Classify Non –Traditional machining process. (6 Marks)  
(b) Explain the need of Non –Traditional machining process. (5 Marks)  
(c) List the advantages and disadvantages of Non –Traditional machining process. (5 Marks)

**OR**

2. (a) Enumerate the physical parameters of the Non –Traditional machining process. (6 Marks)  
(b) Discuss the process capability of any two Non –Traditional machining process. (5 Marks)  
(c) Differentiate Traditional and Non –Traditional machining process. (5 Marks)

**Module-2**

3. (a) Sketch and explain Ultrasonic machining process. (6 Marks)  
(b) Explain the influence of various process parameters on MRR in USM. (5 Marks)  
(c) Explain, how does abrasive jet machining differ from conventional sand blasting process? (5 Marks)

**OR**

4. (a) What are the different types of abrasives used in AJM? Explain any two. (6 Marks)  
(b) With neat sketch explain the working principle of Abrasive Jet machining process. (5 Marks)  
(c) With the help of neat sketch explain Water Jet Machining process. (5 Marks)

**Module-3**

5. (a) Explain different elements of electro chemical machining process. (6 Marks)  
(b) Sketch and explain the electro chemical grinding operation. (5 Marks)  
(c) With neat sketch, explain the working principle of ECM process. (5 Marks)

**OR**

6. (a) Sketch and explain different steps involved in the chemical machining process. (6 Marks)  
(b) Explain in brief the following in chemical machining process:  
i) Maskants, ii) Etchants. (5 Marks)  
(c) List the advantages, limitations and applications of chemical machining process. (5 Marks)

**Module-4**

7. (a) Sketch and explain the electrode feed control used in EDM process (6 Marks)  
(b) Explain with sketch the travelling wire EDM process. (5 Marks)  
(c) Sketch and explain various die electric flow patterns of EDM process. (5 Marks)

**OR**

8. (a) Explain with sketch the principle of working of plasma arc machining process. (8 Marks)  
(b) List the safety precautions, advantages, limitations and applications of PAM process. (8 Marks)

## Module-5

9. (a) Sketch and explain Laser beam machining process. (6 Marks)  
(b) Discuss various process parameters of LBM process. (5 Marks)  
(c) List the advantages, limitations and applications of LBM process. (5 Marks)

**OR**

10. (a) Explain with sketch the principle of working of Electron beam machining process. (6 Marks)  
(b) State the advantages and limitations of EBM process. (5 Marks)  
(c) Describe the apparatus used to generate the Laser. (5 Marks)